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Case Report

Subcutaneous dirofilariasis of the eyelid

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Case report

A 35-year-old female patient presented to the eye department of a tertiary care hospital with complaints of swelling over her left lower eyelid of 1 week duration, which was painless in nature. She did not give any history of recent travel. There was no similar swelling or rash elsewhere in the body.

Ocular examination revealed distant visual acuity of 6/6 in both eyes. The right eye examination was essentially within normal limits. Torchlight examination of the left eye revealed a nodular swelling of 5-mm diameter over lower eyelid at the junction of medial one-third and lateral two-thirds of the eyelid (Fig. 1). The swelling was firm in consistency, mobile, non-tender and attached to the skin but not to the underlying structures. There was no local rise in temperature or erythema. The slit-lamp examination of the left eye confirmed the finding and did not reveal any other positive findings. Fundus examination revealed no other findings.

On excision of the nodule under local anaesthesia, a long, white, thin, live worm presented out of the mass lesion, following which it was extracted in toto. Histopathological analysis of the parasite revealed a 5-cm long thin, threadlike worm with a rounded cephalic end which was unarmed with no hooklets or suckers (Fig. 2). The tail end was tapered with a thick muscular coat and external longitudinal ridges but with the absence of spicules. Based on the characteristic morphological features, the parasite was identified as *D. repens*.

The patient underwent a thorough systemic workup including haemogram, urine and stool routine examination, chest radiograph, posteroanterior (PA) view and magnetic resonance imaging (MRI) brain. All investigations were within normal limits.

Introduction

Dirofilariasis is a zoonotic disease and is one of the very rare causes of ocular parasitosis.¹ *Dirofilaria repens* (*D. repens*) causes the subcutaneous infection. Ocular dirofilariasis has most commonly been reported from the countries of Italy and Russia. Very few cases of ocular involvement have been reported from India till date.² However, the prevalence of human dirofilariasis is on the rise with more cases being reported every year due to increase in international travel. Here, we report a case of subcutaneous dirofilariasis of the eyelid detected in a tertiary care hospital of Kochi.

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Fig. 1 – Unmagnified image of the patient showing eyelid nodule left.

Fig. 2 – *Dirofilaria repens* seen as a long, thin, threadlike worm about 5 cm in length.

Outcome and follow-up

Based on the histopathological diagnosis, the patient was started on single dose of oral ivermectin 400 µg/kg and a course of diethylcarbamazine at 6 mg/kg/day in three divided doses for 14 days. The patient was reviewed again at 15 days and 1 month postoperatively. The subcutaneous swelling reduced in size and resolved with minimal scarring (Fig. 3). There was no evidence of subcutaneous lesions elsewhere in the body.

Discussion

Subcutaneous dirofilariasis is a much underreported disease worldwide. There are only 800 cases reported world over. In India, only 73 cases have been reported since 1977.³ Moreover, cases of ocular involvement are rarer still.⁴ Hence, we have discussed this case of subcutaneous dirofilariasis presenting as an eyelid nodule to increase awareness among practising ophthalmologists regarding this entity as a differential diagnosis of eyelid nodule. The eye may be involved in the form of

Fig. 3 – Postoperative photograph of the patient showing healed nodule with no recurrence.

periorbital, intraocular or subconjunctival dirofilariasis.⁵ The first case of subconjunctival dirofilariasis in India was reported from Thiruvananthapuram, Kerala, India, and the causative organism was *D. repens*.⁶ Few other cases have been reported from India from the states of Karnataka, Assam and western India.^{5–9} The state of Kerala is recognised to be endemic for dirofilariasis.¹⁰ A large case series of 21 cases of subcutaneous dirofilariasis has been reported from Kerala. The case series too had very few cases of ocular dirofilariasis.¹¹ Also, there is a review article on all cases of human dirofilariasis reported till date by Kini et al.³

Dirofilariasis is mainly a cosmopolitan zoonosis with the dog as the definitive host. The mosquitoes of genus *Anopheles*, *Aedes* and *Culex* are the intermediate hosts and harbour infective larvae acquired from the blood of animals infected with *Dirofilaria*. Humans acquire the infection by the bite of mosquitoes. The dirofilaria cannot mature completely in humans and die before producing microfilaria. Hence, humans are considered as a dead-end host.

Subconjunctival involvement of the eye is seen to be the most common presentation. It presents with redness, swelling, foreign body sensation and increased lacrimation.² Very few cases of eyelid involvement have been reported.¹ It presents as a cystic, sometimes painful swelling of the eyelid and mimics a subcutaneous cyst or granuloma. Hence *D. repens* infection should be kept as a differential diagnosis in such cases. Rare cases of intravitreal infection have also been reported.¹² This is one of the first cases of its kind to be reported in the Armed Forces population.

Diagnosis is by histopathological identification of the parasite. The characteristic features of *D. repens* are short cephalic space with longitudinal cuticular ridges over the body. Surgical removal of the nodule with the parasite is generally the recommended modality of treatment.

To conclude, a high index of suspicion is generally required to diagnose ocular dirofilariasis. Hence, many cases go undiagnosed. However, with more number of cases being reported worldwide, the awareness regarding the condition is gradually increasing. Ocular dirofilariasis should always be kept in mind while managing cases of subcutaneous nodules around the eye.

Conflicts of interest

The authors have none to declare.

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